Bioethics and the New Medicine: An Overview

S.Y. Tan MD, JD

The term New Medicine describes our new age of health-care reform and biotechnological discoveries. While offering hope for a healthier and more productive nation, New Medicine challenges us to come to terms with the cost, the complex social issues resulting from medical breakthroughs, and the limits to autonomy. A simplified ABC overview of some of the many bioethical dilemmas that now confront us are offered in this article.

A is for Affordability

America spends nearly 14% of its GDP on health care, about twice as much as other industrialized countries. Despite expenditures of nearly $1 trillion, some 37 million Americans are without health coverage. Even those who have health insurance are aghast at the high cost of becoming ill.

Medical expenditures continue to mount because of: 1) our aging population, 2) the increasing prevalence of chronic diseases, 3) new expensive medical technology, 4) a demanding citizenry, 5) physicians' practice of defensive medicine, and 6) no personal incentive to minimize expenses. Managed care has been touted as an effective means to contain costs. Capitation will replace fee-for-service. Increased reliance on gatekeeping primary care providers is expected to curtail the overutilization of specialists and expensive testing. Because the incentive is to do less, not more, it is expected that managed care will reduce costs in the short term. What is of concern, however, is whether managed care will reduce the high quality of care that Americans expect and demand.

If we accept that our resources are finite, and medical costs will not abate, then we must accept that we cannot afford all the health care we desire. In order to assure universal access should we resort to rationing? One proposal is to offer a basic package to all Americans irrespective of their ability to pay. Those who want more will bear the added costs themselves. This approach pits the wealthy against the poor, and arguably violates the bioethical principle of distributive justice. On the other hand, if the basic health-benefit package is carefully defined, all patients should enjoy excellent medical care, forgoing only treatment that is experimental, unproven, desperate, futile, or prohibitively expensive.

S. Y. Tan MD, JD is Professor of Medicine and
Adjunct Professor of Law at the University of Hawaii.
He chairs the Ethics Committee at St Francis Medical Center, Honolulu.

B is for Breakthroughs

Medical discoveries are accelerating at a breakneck pace, due largely to breakthroughs in cracking the genetic code. We can isolate and clone genetic material that directs the production of vital body chemicals such as enzymes, hormones, and proteins. The National Institutes of Health are well into their multicenter Human Genome Project; scientists are expected to complete this task by the year 2010. The project maps the entire genetic structure and function of human cells, which will unlock secrets of cellular physiology and pathology. Treatment for once-incurable conditions will swiftly follow by replacing the missing or defective genes.

Gene drugs have apparently cured two young girls with severe combined immunodeficiency and are being used in experimental trials to treat such disparate diseases as cancer, hemophilia, hypercholesterolemia, and cystic fibrosis. In the near future, they will be standard fare in the fight against many other diseases including diabetes and hypertension. A brave new world of medical triumphs will mark the turn of the millennium. But these breakthrough technologies are likely to be expensive, threatening to stretch and strain our finite health care budget. And genetic engineering is likely to create new ethical dangers.

Understanding the genetic code allows us to control not only diseases, but also such things as eye color, height, and intelligence, since these attributes, like all cellular functions and products, are under direct genetic DNA control. Bioethicists are rightly nervous and suspicious about this new power to tinker with nature.

Take height as an example. We would surely welcome a genetic cure for a child stunted by growth hormone deficiency. Currently these children are treated with injections of human growth hormone, with only partial success. It is quite another matter, however, to select out tall progenies by genetic manipulation of otherwise perfectly normal individuals. Tallness is socially advantageous. Sports value it, the sexes crave it, and businesses reward it (six-foot graduates command a starting salary 12.4% more than their shorter classmates). Height even wins presidencies; the taller candidate was victorious in 80% of all presidential elections in this century. Once the height gene is cloned and clinically available, should parents be allowed to opt for taller offspring?

The new genetics will also identify aberrant *gene markers* that can predict a disease state long before it becomes clinically manifest. Such knowledge is likely to invite discriminatory practices in insurance underwriting and in employment. Genetic

testing additionally raises ethical and legal issues of consent and privacy.

Breaking the genetic code breaks the taboo against eugenics, that notorious science of improving the hereditary qualities of the human race. Prudence and history remind us that selfish tampering with nature frequently leads to unintended and undesirable outcomes. What moral code do we adopt to constrain the new genetics? Are we apt to repeat those Nazi experiments in eugenics to produce a superior race? Ethical guidelines lag far behind scientific strides, yet the genetic genie is virtually out of the bottle. Will the glare of its potential for good blind us to the evil it can unleash?

Another technological breakthrough of the New Medicine is the marvelous electronic communication systems that instantly record, collect, store, and transmit information. Medical charts will become obsolete. Poor communication, illegible record keeping, and misplaced prescriptions will thankfully disappear. Patient records will be instantly retrievable, as will the latest in medical research. Patient care will be dramatically more efficient.

But we risk losing the privacy and confidentiality of our medical lives by getting on this electronic information superhighway. The health care system is no longer just doctors, nurses and patients. It is now populated by assorted faceless health plan administrators, third-party payers, governmental agents, and purveyors of medical products. Protecting the confidentiality of these electronic records will require much care, foresight and sensitivity. Irrespective of the safeguards employed, one thing is clear: In the New Medicine, like it or not, many more in the system will know and share our medical profiles.

One other concern. Medical informatics threatens the doctor-patient relationship with its offer to take histories by computer, and physical examination and surgery by programmed robots. Meaningful personal contact with a health care provider, who may not even be a doctor, is likely to be brief. Advocates of *computer medicine* believe in its superiority, because the methodology employs outcomes-determined algorithms with proven cost-effectiveness. Others wisely ask whether high tech can ever supplant the high touch of the doctor's hand, her placebos, and her humanity.

C is for Choice

Patient autonomy is a bioethical principle of recent vintage, an outgrowth of American laws governing privacy and liberty rights. Autonomy underpins many widely accepted western medical practices such as informed consent, living wills, and do-not-resuscitate orders. It properly empowers the patient with the control of her body, even for decisions that run counter to the doctor's advice. But patient choice, like free speech, has its limits. Testing these limits of autonomy is at the heart of the current heated debate on two bioethical issues: Futile treatment and euthanasia.

Futile treatment can be defined as that which neither cures nor palliates. Examples of medical futility include treating patients in a persistently vegetative state, or condemning a patient to an irreversible permanent dependence on intrusive life support in an intensive care unit. Families are sometimes known to demand such non-beneficial treatment. Unfortunately, recent case-law appears to favor such family requests for continued expensive futile treatment. Should this trend continue, autonomy's triumph over paternalism will wastefully bloat our health care budget deficit.

A final ethical dilemma: Euthanasia. Supporters of euthanasia assert that the right to die is the logical and ultimate expression of self-determination. Opponents, on the other hand, question the existence of such an absolute right, pointing to the sanctity of life and the dangers of abuse should mercy-killing be legalized.

Such abuse concerns led to the narrow 54 to 46 rejection of *aid-in-dying* initiatives in Washington and California in 1992 and 1993. However, this past November 8, voters in Oregon approved Measure 16, which sanctions any terminally ill patient's request for drugs to end life. Around the same time, the Michigan court absolved Dr Kevorkian of wrongdoing. Kevorkian is the pathologist who assisted in the suicidal death of 21 patients. It is easy to predict that legalizing euthanasia will rank as the premier ethical issue as we enter the era of the New Medicine.

Conclusions

The modern doctor faces a bewildering array of ethical dilemmas in the practice of her profession. The selection seems endless. In addition to those discussed earlier, we have test-tube babies and surrogate motherhood, life support for very low birth-weight infants and organ transplantation, to name just a few. Observers of America's health scene lament that physicians are not very good at identifying or solving bioethical issues. Pertinently, one might ask whether and how our medical schools and teaching hospitals are preparing future generations of doctors to meet ethical challenges—those recognized and those yet undefined. Never before in the history of medicine has its art been more dangerously asynchronous with, and outpaced by, its science.